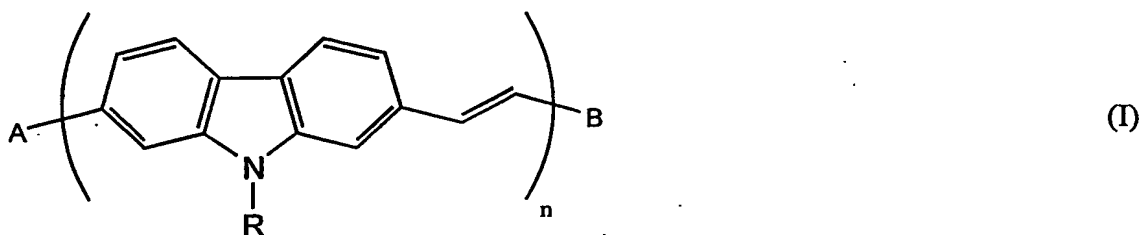


Claims:

1. An organic based electronic device having as an active material a conjugated oligomeric or polymeric 2,7-carbazolenevinylene derivative described by the formula (I):

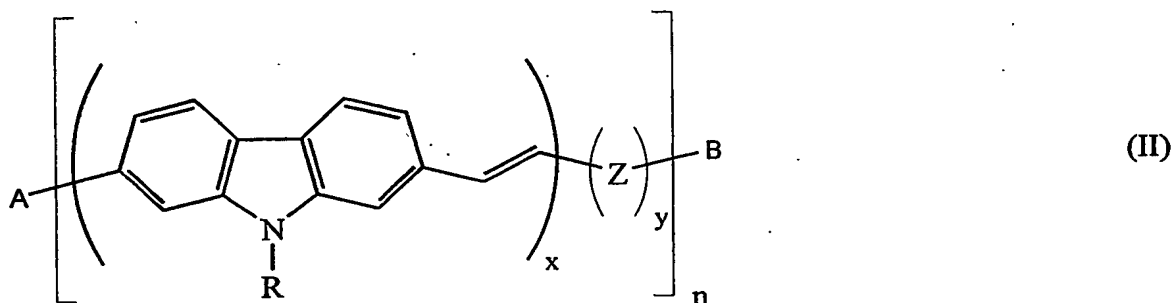


wherein n is an integer ≥ 3 , R represents a substituent that is a hydrogen, or linear or branched alkyl group containing 1 to 20 carbon atoms, linear or branched alkoxy group containing 1 to 20 carbon atoms, poly (ethyleneoxy), cyano, aryl group, amide group or benzoyl group, and A , B are any type of end-cap groups selected from the group consisting of hydrogen, linear or branched alkyl group containing 1 to 20 carbon atoms, linear or branched alkoxy group containing 1 to 20 carbon atoms, cyano group, halogen group, monovalent aromatic group, and monovalent aromatic complex ring group having one nitrogen atom as a hetero-atom.

2. The organic based device as defined in claim 1 being an Organic Field Effect Transistor (OFET).
3. The organic based device as defined in claim 1 being an Organic Light Emitting Diode (OLED).

4. The organic based device as defined in claim 1 being an Organic Photovoltaic Cell (OPC).

5. An organic based device from the group; an Organic Field Effect Transistor (OFET), an Organic Light Emitting Diode (OLED), and an Organic Photovoltaic Cell (OPC), the device comprising active material including a conjugated 2,7-carbazolenevinylene derivative where 2,7-carbazolenevinylene monomers can also be alternated with other monomers to form oligomeric or polymeric materials according to the general formula (II):



wherein n is an integer ≥ 3 , R represents a substituent that is a hydrogen, or linear or branched alkyl group containing 1 to 20 carbon atoms, linear or branched alkoxy group containing 1 to 20 carbon atoms, poly (ethyleneoxy), cyano, aryl, amide or benzoyl, x is an integer between 1 to 1000, y is an integer between 0 to 1000, Z is any type of comonomer selected from the group consisting of ethylene, acetylene, C_6 - C_{22} mononuclear/polynuclear aromatic, C_2 - C_{10} mononuclear/polynuclear heterocyclic groups and tertiary arylamines, and A , B are any type of end-cap groups selected from the group consisting of hydrogen, linear or branched alkyl group containing 1 to 20 carbon atoms, linear or branched alkoxy group containing 1 to 20 carbon atoms, cyano group, halogen group, monovalent aromatic group, and monovalent aromatic complex ring group having one nitrogen atom as a hetero-atom.

6. The organic based device of claim 5 being an OFET, wherein said 2,7-carbazolenevinylene derivative is 1,4-bis(vinylene-(N-methyl-7-hexyl-2-carbazole))phenylene (RCPCR).
7. The organic based device of claim 5 being an OFET, wherein said 2,7-carbazolenevinylene derivative is 1,4-bis(vinylene-(N-hexyl-2-carbazole))phenylene (CPC).
8. The organic based device of claim 5 being an OLED, wherein said 2,7-carbazolenevinylene derivative is [Poly (N-(2-ethylhexyl-2,7-carbazolenecyanovinylene-co-2,5-bis(diphenylamine)-1,4-phenylenecyanovinylene-co-2,5-dioctyloxy-1,4-phenylenecyanovinylene)] (PCVDPAP).
9. The organic based device of claim 5 being an OLED, wherein said 2,7-carbazolenevinylene derivative is [Poly (N-(2-ethylhexyl)-2,7-carbazolenecyanovinylene-*alt*-2,5-dioctyloxy-1,4-phenylenevinylene)] (PCCVP).
10. The organic based device of claim 5 being an OLED, wherein said 2,7-carbazolenevinylene derivative is mixed with a second active material.
11. The organic based device of claim 5 being an OLED comprising a hole transport layer, an electron transport layer, and wherein at least one of said hole transport layer and said electron transport layer comprises either alone or in combination as active material a conjugated 2,7-carbazolenevinylene derivative.
12. The organic based device of claim 5 being an OLED, further comprising a carrier promotion layer adjacent at least one of said electron transport layer and said hole transport layer.

13. The organic based device of claim 5 being an OLED, wherein said electron promotion is LiF.
14. The organic based device of claim 5 being an OLED, wherein said hole promotion is [Poly (ethylene dioxythiophene: polystyrene sulfonate)] (PEDOT-PSS).
15. The organic based device of claim 5 being an OLED, wherein said hole promotion is [Poly (ethylene dioxythiophene: polystyrene sulfonate)] (PEDOT-PSS), said hole transport is [Poly (N-(2-ethylhexyl)-2,7-carbazolenecyanovinylene-*alt*-2,5-dioctyloxy-1,4-phenylenevinylene)] (PCCVP), said electron transport layer is Bu-PBD (2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole) and said electron promotion is LiF.
16. The organic based device of claim 5 being an OPC, wherein said 2,7-carbazolenevinylene derivative is [Poly (N-(2-ethylhexyl-2,7-carbazolenevinylene-co-2,5-bis(diphenylamine)-1,4-phenylenevinylene-co-((4-(2-ethylhexyloxy)-phenyl)-bis-(4'-phenylene)amine))] (PCVDPATA).
17. The organic based device of claim 5 being an OPC, wherein said 2,7-carbazolenevinylene derivative is [Poly (N-(4-hexyloxyphenyl)-2,7-carbazolenevinylene-*alt*-(3-hexyl-2,5-thiophenevinylene))] (PPCVT).
18. The organic based device of claim 5 being an OPC, wherein said 2,7-carbazolenevinylene derivative is mixed with a second active material.

19. The organic based device of claim 5 being an OPC, wherein said second active material is [N,N'-Bis(2,6-dimethylphenyl)-3,4,9,10-perylenetetracarboxylic diimide] (PTD).
20. The organic based device of claim 5 being an OPC, wherein said second active material is [6,6-phenyl-C61 butyric acid methyl ester] (PCBM).
21. The organic based device of claim 5 being an OPC comprising a hole transport layer, an electron transport layer, and wherein at least one of said hole transport layer and said electron transport layer comprises either alone or in combination as active material a conjugated 2,7-carbazolenevinylene derivative.